

Credit Spread





Credit Spread

The interest rate used to discount cashflows may include a credit spread above or below the base rate.

The risk-free discount factor is **$\exp(-rT)$** where r is the interest rate and T is the maturity.

The risky discount factor is **$\exp[-(r+s)T]$** where s is the credit spread.



Credit Spread

Credit spread can be derived by either structural model or reduced-form (intensity) model.

The structural approach regards default as an endogenous event by focusing on the capital structure of the firm.

Whereas the reduced-form approach does not explain the event of default endogenously, but characterizes it exogenously by a jump process.



Credit Spread

Credit spread is the credit funding cost for a firm. Credit spread impacts discounting, default probability, and early termination.

Credit spreads are related to rating categories. Regardless of how the rating categories are constructed and of how many categories there are, it is necessary to specify the default likelihood for each category and provide a credit spread to correspond to each category.



Credit Spread

In order to calculate the equivalent credit spread (zero rate) from the survival probabilities, the recovery of treasury assumption is made such that both the coupon payments and the face value are included in the default claim amount.

Survival Probabilities are calculated at the Risk factors points and the equivalent credit spread in zero rate is calculated

To generate the all-in CDS credit curve, the term structured credit spreads need to be added on top of the base curve (e.g. swap curve USD_STUB). This can be achieved by adding the zero rates of the two curves by passing in base curve and the spread curve.



Thank You

Reference:

<https://finpricing.com/curveVolList.html>